






Fourth Grade AP Standards Progression 2012-13

Grade 4	Weeks 1-6	Weeks 7-12	Weeks 13-18	Weeks 19-24	Weeks 25-30	Weeks 31-36
Use the four operations with whole numbers to solve problems.						
4.OA.1 - Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations. 	<ul style="list-style-type: none"> I can explain why two different equations with the same numbers can be equal. 	<ul style="list-style-type: none"> I can explain why two different equations with the same numbers can be equal. 				
4.OA.2 - Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. 		<ul style="list-style-type: none"> I can solve word problems involving multiplicative comparisons with a symbol for the unknown using multiplication and division. 				
4.OA.3 - Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. 		<ul style="list-style-type: none"> I can solve multi-step word problems with whole numbers using addition and subtraction. I can represent word problems with an equation using a letter for an unknown. 				




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		<ul style="list-style-type: none"> I can check the reasonableness of an answer using mental math and estimation strategies including rounding. 				
Gain familiarity with factors and multiples.						
4.OA.4 - Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.		<ul style="list-style-type: none"> I can explain the relationship between a factor and a multiple. I can recognize if a number 1-100 is a multiple of a single digit number. I can recognize if a number 1-100 is prime or composite. I can find all the factor pairs of a whole number 1-100. 				
Generate and analyze patterns						
4.OA.5 - Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.		<ul style="list-style-type: none"> I can create a number pattern that follows a given rule. I can create a shape pattern that follows a 				


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		given rule. I can identify features of patterns that are not stated in the rule itself.				
Generalize place value understanding for multi-digit whole numbers.						
4.NBT.1- Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. 						<ul style="list-style-type: none"> I can recognize a digit in one place represents ten times what it represents in the place to its right.
4.NBT.2 - Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons. 						<ul style="list-style-type: none"> I can read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. I can compare two multi-digit whole numbers based on the value of the digits in each place. I can use $>$, $=$, and $<$ symbols to record my comparisons of two multi-digit whole numbers.



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4.NBT.3 – Use place value understanding to round multi-digit whole numbers to any place. 						<ul style="list-style-type: none"> I can use what I know about place value to round multi-digit whole numbers to any place.
Use place value understanding and properties of operations to perform multi-digit arithmetic.						
4.NBT.4 - Fluently add and subtract multi-digit whole numbers using the standard algorithm. 	<ul style="list-style-type: none"> I can fluently add multi-digit whole numbers using the standard algorithm. I can fluently subtract multi-digit whole numbers using the standard algorithm. 					
4.NBT.5 - Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. 		<ul style="list-style-type: none"> I can multiply a number with up to 4 digits by a 1-digit number using strategies based on place value and properties of operations. I can multiply two 2 digit 				


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		<p>numbers using strategies based on place value and properties of operations.</p> <ul style="list-style-type: none"> • I can illustrate and explain multiplication calculations using equations, rectangular arrays and/or area models. 				
<p>4.NBT.6 - Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> 		<ul style="list-style-type: none"> • I can find the whole number quotient of a division problem with up to two-digit dividends and one-digit divisors using strategies based on place value, properties of operations, and/or the relationship between multiplication and division. • I can illustrate and explain division calculations 				

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		using equations, rectangular arrays, and/or area models.				
Extend understanding of fraction equivalence and ordering.						
<p>4.NF.1 - Explain why a fraction $\frac{a}{b}$ is equivalent to a fraction $\frac{(n \times a)}{(n \times b)}$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.</p> 				<ul style="list-style-type: none"> I can compare and contrast visual fraction models representing equivalent fractions. I can identify and create equivalent fractions. 		
<p>4.NF.2 - Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.</p> 				<ul style="list-style-type: none"> I can compare two fractions with different numerators and denominators by creating common denominators or numerators or by comparing to a benchmark fraction. I can explain that comparisons of fractions 		



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				<p>are valid only when the fractions refer to the same whole.</p> <ul style="list-style-type: none"> I can use $>$, $=$, and $<$ symbols to record my comparisons of fractions and justify my conclusions. 		
Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.						
<p>4.NF.3 -Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.</p> <p>a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.</p> <p>Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. </p>				<ul style="list-style-type: none"> I can add fractions that refer to the same whole. I can subtract fractions that refer to the same whole. I can decompose a fraction into a sum of fractions with the same denominator in more than one way. I can use my strategies to add mixed numbers with like denominator 		



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				<p>s.</p> <ul style="list-style-type: none"> • I can use my strategies to subtract mixed numbers with like denominators. • I can use my strategies to solve word problems involving addition of fractions that refer to the same whole and have like denominators. • I can use my strategies to solve word problems involving subtraction of fractions that refer to the same whole and have like denominators. 		
4.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.				<ul style="list-style-type: none"> • I can use what I know about multiplication to multiply a 		


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<p>a. Understand a fraction $\frac{a}{b}$ as a multiple of $\frac{1}{b}$. For example, use a visual fraction model to represent $\frac{5}{4}$ as the product $5 \times (\frac{1}{4})$, recording the conclusion by the equation $\frac{5}{4} = 5 \times (\frac{1}{4})$.</p> <p>b. Understand a multiple of $\frac{a}{b}$ as a multiple of $\frac{1}{b}$, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (\frac{2}{5})$ as $6 \times (\frac{1}{5})$, recognizing this product as $\frac{6}{5}$. (In general, $n \times (\frac{a}{b}) = (\frac{n \times a}{b})$.)</p> <p>c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat $\frac{3}{8}$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?</p> 				<p>fraction by a whole number.</p> <ul style="list-style-type: none"> I can express any fraction as a multiple of a unit fraction. I can multiply any fraction by a whole number by creating an equivalent multiplication expression involving a unit fraction. I can solve word problems involving multiplication of a fraction by a whole number using visual fraction models and equations to represent the problem. 		
Understand decimal notation for fractions, and compare decimal fractions.						
<p>4.NF.5 - Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. </p>				<ul style="list-style-type: none"> I can express a fraction with a denominator of 10 as an equivalent 		


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				<p>fraction with a denominator of 100.</p> <ul style="list-style-type: none"> I can add two fractions when one of the fractions has a denominator of 10 and the other has a denominator of 100. 		
<p>4.NF.6- Use decimal notation for fractions with denominators 10 or 100. <i>For example, rewrite 0.62 as $\frac{62}{100}$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.</i> </p>				<ul style="list-style-type: none"> I can write a fraction with a denominator of 10 or 100 as a decimal. 		
<p>4.NF.7- Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model. </p>				<ul style="list-style-type: none"> I can compare two decimals to hundredths by reasoning about their size. I can recognize that comparisons of decimals are valid only when they refer to the same whole. I can use $>$, $=$, 		

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				and < symbols to record my comparisons of two decimals and justify my conclusions.		
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.						
4.MD.1 - Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. 			<ul style="list-style-type: none"> I can describe the relationship between sizes of measurement units in the same measurement system. I can convert measurements from larger units to smaller units within the same measurement system. I can record equivalent measurements in a two-column table. 			
4.MD.2 - Use the four operations to solve word problems involving distances, intervals of time, liquid				<ul style="list-style-type: none"> I can use the four operations to 		

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<p>volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. </p>				<p>solve word problems involving simple fractions.</p> <ul style="list-style-type: none"> • I can use the four operations to solve word problems involving liquid volumes. • I can use the four operations to solve word problems involving masses of objects. • I can use the four operations to solve word problems involving distances. • I can use the four operations to solve word problems that involve converting measurements from larger units to smaller units. 		
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				<ul style="list-style-type: none"> I can represent measurements with diagrams like number lines that have a measurement scale. 		
4.MD.3 - Apply the area and perimeter formulas for rectangles in real world and mathematical problems. 🚫			<ul style="list-style-type: none"> I can use a formula to find the perimeter of a rectangle in real world and mathematical problems. I can use a formula to find the area of a rectangle in real world and mathematical problems. 			
Represent and interpret data.						
4.MD.4 - Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots.				<ul style="list-style-type: none"> I can make a line plot that displays measurements including fractions of a unit $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$ I can solve addition and 		

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				subtraction problems involving fractions using information from a line plot.		
Represent and interpret data.						
<p>4.MD.5 - Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:</p> <p>a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a "one-degree angle," and can be used to measure angles.</p> <p>b. An angle that turns through n one-degree angles is said to have an angle measure of n degrees.</p>			<ul style="list-style-type: none"> • I can describe how angles are formed. • I can explain how angles are measured. • I can explain how the measurement of an angle relates to a fraction of a 360° circle. • I can describe how the "degree" unit of measure is used to measure angles. • I can express an angle measurement in terms 			

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			of the number of one-degree angles in that angle.			
4.MD.6 - Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.			<ul style="list-style-type: none"> I can use a protractor to measure an angle in whole-number degrees. I can sketch angles of a specified measure. 			
4.MD.7 - Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.			<ul style="list-style-type: none"> I can find an angle measure by adding the measurements of the smaller angles that make up the larger angle. I can use my addition and subtraction strategies to solve for an unknown angle on a diagram, in real-world and mathematical problems. 			

Draw and identify lines and angles, and classify shapes by properties of their lines and angles.						
<p>4.G.1 - Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.</p>			<ul style="list-style-type: none"> I can draw points, lines, line segments, rays, right angles, acute angles, obtuse angles, perpendicular and parallel lines. I can identify points, lines, line segments, rays, right angles, acute angles, obtuse angles, perpendicular and parallel lines in two-dimensional figures. 			
<p>4.G.2 - Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and</p>			<ul style="list-style-type: none"> I can classify a two-dimensional figure based on whether or not it has 			

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identify right triangles.			<p>perpendicular or parallel lines.</p> <ul style="list-style-type: none"> • I can classify a two-dimensional figure based on the size of its angles. • I can classify triangles as right triangles based on their characteristics. 			
4.G.3 - Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.			<ul style="list-style-type: none"> • I can identify lines of symmetry on a two-dimensional figure. • I can identify figures that have line symmetry. • I can draw lines of symmetry on a two-dimensional figure. 			
5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an					<ul style="list-style-type: none"> • I can add and subtract fractions (including mixed 	

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equivalent sum or difference of fractions with like denominators. <i>For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general, $a/b + c/d = (ad + bc)/bd$.)</i>					numbers) with unlike denominators by finding equivalent fractions with like denominators.	
5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. <i>For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.</i>					<ul style="list-style-type: none"> I can use my strategies to solve word problems involving addition and subtraction of fractions. I can use benchmark fractions and number sense of fractions to mentally estimate and assess the reasonableness of my answers. 	
5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. a) Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. <i>For example, use a visual fraction model to show $(2/3) \times (2/5) = 8/15$. (In general, $(a/b) \times (c/d) =$</i>					<ul style="list-style-type: none"> I can compare the size of the product of two fractions to the product of two other fractions based upon the size of the unit fraction. I can use a visual model to represent a fraction 	

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<p><i>ac/bd.)</i></p> <p>b) Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.</p>					<p>multiplied by another number.</p> <ul style="list-style-type: none"> I can create a story context for a situation involving a fraction multiplied by another number. b. I can use my strategies to represent fraction products as rectangular areas. 	
<p>5.NF.5 Interpret multiplication as scaling (resizing), by:</p> <p>a) Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.</p> <p>b) Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating to</p>					<ul style="list-style-type: none"> I can compare the product to one factor based on the size of the other factor without multiplying the factors. b. I can multiply a whole number by a fraction and compare the size of the product to the original whole number. 	

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principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.						
5.NF.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.					<ul style="list-style-type: none"> I can use my strategies to solve real world problems involving multiplication of fractions and mixed numbers. 	
5.NBT.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.						<ul style="list-style-type: none"> I can explain how the value of the digit in a multi-digit number relates to the value of the digits around it.
5.NBT.3 Read, write, and compare decimals to thousandths.						<ul style="list-style-type: none"> I can read and write decimals to thousandths using base-ten numerals, number names, and expanded form. I can compare two decimals to thousandths based on the digits in each place using $>$, $=$, and $<$.
5.NBT.4 Use place value						<ul style="list-style-type: none"> I can use place

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understanding to round decimals to any place. Learning Target:						value understanding to round decimals to any place.
5.MD.1 convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.						<ul style="list-style-type: none"> I can convert among different-sized standard measurement units within the same system and solve multi-step real world problems.